

CLAIMS: I claim:

1. An apparatus for heat exchange between two substances, comprising:
a vessel with tube sheets on opposite sides and
bent tubing inside such vessel; the tubing is welded to tube sheets on both
sides and is bent in a such way, as to limit thermal stress to acceptable level.
2. An apparatus according to claim 1, wherein each even row is moved relative
to add rows, creating a staggered tube bank.
3. An apparatus according to claim 1, wherein each even row is mirrored
4. An apparatus according to claim 1, wherein each parts of tubes near
sidewalls are bent with a bigger radius
5. An apparatus according to claim 1, wherein bent tubing consists of straight
tube parts connected by 180 degree bends
6. An apparatus according to claim 4, wherein each even row is moved relative
to add rows, creating a staggered tube bank
7. An apparatus according to claim 1, wherein several tubes are bent together
8. An apparatus for heat exchange between two substances, comprising:
two separate tube bundles and
at least one tube bundles is connected to removable tube sheets in a such
way that it can be removed without disconnecting tubing from tubesheets.